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REMARKS

In the present case, Examiner Swiger has issued a final Office Action concerning claims 44-58, rejecting each of the claims principally on the basis of one or both of U.S. patent No. 5,797,911 to Sherman and U.S. Patent No. 5,891,145 to Morrison. With respect to certain claims, as further discussed below, U.S. Patent No. 6,090,111 to Nichols and U.S. Patent No. 6,280,442 to Barker were combined with the Sherman reference in an obviousness rejection. The pending claims were added in response to a prior Office Action, and thus this Action is the first consideration of those claims by the Examiner. Claims 59-62 have been cancelled without prejudice to refiling in this or a continuing application. Entry of new claims 63-68, which

depend from independent claims 44 and 53, is respectfully requested. Reconsideration of the

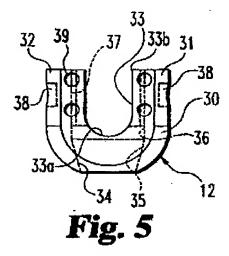
present claims in view of the following arguments is respectfully requested.

Rejections under Section 102 over Sherman

The pending Office Action first alleged that claims 44-45, 47, 49-53 and 55-56 were anticipated by the Sherman reference. Respectfully, the Sherman reference does not expressly or inherently show all elements of at least independent claims 44 and 53, and therefore this rejection should be withdrawn.

Claims 44 and 53 each recite, among other things, a receiver member having an interior groove. In claim 44, that interior groove is substantially perpendicular to a longitudinal axis of the receiver member, and in claim 53, that interior groove is around at least a part of a lower opening portion of the receiver member. The Sherman reference does not show an interior groove as recited in these claims. A reproduction of Sherman's Figure 4, showing a receiver member, is below. As seen in that drawing, item 36 is not a groove, but is the middle portion of

the central bore 34, which also includes a lower, tapered portion 35 and an upper threaded



portion 37. The figure also shows that the diameter of recess portion 36 is the same as the diameter of recess portion 35 where 35 and 36 meet, and is the same as the outer diameter (or root diameter) of the threaded section 37. Sherman states that recess portion 35 expands from a lower opening to the diameter of the recess portion 36 (see column 5, lines 23-30 and 58-60), and that the diameter of the recess portion 36 is slightly larger than the inner diameter (crest diameter) of the threaded portion 37 (see column 6, lines 50-52). That inner or crest diameter appears to be indicated by the inner pair of vertical dotted lines in Sherman's Figure 5. Thus, Sherman describes a receiver member 12 with a "unitary" bore 34 which tapers at one end, has threads that extend into it at another end, and a constant diameter middle joining the ends.

The present application describes and shows a groove 41 that is essentially a trough in a wall 39. The drawings and text of the present application note that groove 41 has a diameter larger than the diameter of wall 39. See, e.g., paragraph 0032, and FIGS 3C and 7. That usage is consistent with the ordinary meaning of "groove," which is defined as a channel or depression.

See Merriam-Webster's Collegiate Dictionary, 10th ed., p. 514 (copy enclosed). The portion 36 of bore 34 in Sherman is not a channel or depression, but is a constant diameter part of bore 34 that joins a lower portion that tapers from the same diameter as part 36, and an upper portion with the same diameter as part 36 and thread crests extending from that diameter. It is recognized that the Examiner must use the broadest reasonable interpretation of claim terms in his examination. However, based on the disclosure of the present application, the disclosure of Sherman, and the plain meaning of "groove," it is submitted that one of ordinary skill in the art would not appreciate the idea of a "groove" from Sherman's item 36.

It is also submitted that the Office Action reads too much into crown member 13 (with surface 45) of the Sherman reference in calling it a "retaining member" as recited in claim 44. Referring principally to column 6, line 44-column 7, line 55, a basis for calling crown member 13 a "retaining member" as in the claims is not seen. Crown member 13 is contained within receiver member 12, it provides a conical underside for secure connection to a bone screw head, and it transfers force from a rod through to the screw head. Sherman describes inserting a screw through the receiver member, securely threading the screw into bone, and inserting the crown member, rod and set screw. When the bone screw is in the bone, the crown member is loose within the receiver member to allow movement of the receiver member with respect to the bone screw. While the crown member provides secure mechanical connection and force transmission, it is not clear how the Examiner considers it to be a "retaining member" as in the pending claims.

The crown member 13 of Sherman has an analog with the crown member 70 of the present application, which clearly has a different function from the claimed retaining member. In the present application, the crown member performs the same functions as the crown member in Sherman, but it is the ring or other retaining member that holds the assembly together. In

Sherman, the lower portion of the bore 34 keeps the bone screw in. Respectfully, there is no basis for comparing the crown member 13 of Sherman to the claimed retaining member, especially since the present application discloses a crown member and it is quite different from the disclosed retaining member.

Claim 53 also recites that the claimed groove is around at least a part of a lower opening portion of the receiver member. As explained above, however, Sherman's part 36 of bore 34 is in the middle of its receiver member, separating an upper part of bore 34 from a lower part.

Sherman accordingly clearly discloses that part 36 is atop and away from a lower opening and lower part of bore 34. See Sherman, column 5, lines 24-28 ("The lowermost portion of the bore 34 defines a tapered recess 35 within which the head 22 of the bone screw 11 resides . . . [and] also includes a crown recess 36 that is directly above the tapered recess 35.") Since Sherman places its part 36 above the lower portion of bore 34, respectfully it cannot be said that part 36 is around a lower opening portion of its receiver member 12.

For at least these reasons, independent claims 44 and 53 are not anticipated by Sherman. Claims 45, 47, 49-53 and 55-56 are dependent from one of those claims, and therefore also cannot be anticipated by Sherman. Applicants reserve the right to point out later specific differences between one or more of these dependent claims and the Sherman reference.

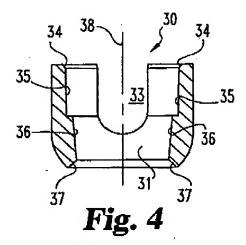
Rejections under Section 102 over Morrison

The pending Office Action also alleged that claims 44-47, 49-53 and 55-57 were anticipated by the Morrison reference. Respectfully, the Morrison reference does not expressly or inherently show all elements of at least independent claims 44 and 53, and therefore this rejection should be withdrawn.

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Claims 44 and 53 each recite, among other things, a receiver member having an interior groove. In claim 44, that interior groove is substantially perpendicular to a longitudinal axis of the receiver member, and in claim 53, it is around at least a part of a lower opening portion of the receiver member. The Morrison reference does not show an interior groove as recited in these claims. Initially, it is noted that the Office Action did not specify what part of Morrison's receiver member 30 was considered to be a "groove," and so this rejection is ambiguous. Even



so, Morrison's Figure 4 (reproduced above) shows no groove. Items 34 and 37 are angled entry and exit surfaces (see column 6, lines 2-13), and these outward surfaces clearly are not a groove as recited in claims 44 and 53. Surface 35 is an "upper" surface in receiver member 30, and can be threaded for a set screw or plug (see column 6, lines 4-8). It is not a groove, and it is not around a lower portion of the receiver member. Surface 36 is inward of surfaces 35 and 37, and thus is not a groove as recited in the claims since it is not a channel or depression (as in the dictionary definition) and it does not have a diameter greater than the adjacent wall, as discussed in the present application. (The discussion of the term "groove" above is applicable here as well.) Respectfully, nothing in the Morrison receiver member is an internal groove as recited in claims 44 and 53, and thus Morrison does not anticipate those claims.

The Office Action appears to assert that "wedge member" 50 of the Morrison reference is a "retaining member," based on its reference to Figure 8b. However, wedge member 50 does not occupy an internal groove, as recited in claim 44. It has already been noted that receiver member 30 does not have a groove at all. Wedge member 50 is clearly not of a dimension that would allow it to occupy any groove in the receiver member. Rather, it is designed to sit within an outer member 40 that in turn is wedged into tapered surface 36. In fact, neither of members 40 or 50 can occupy a groove, member 40 because of its size and placement within member 50, and member 50 because it is intended for a tapered frictional connection with the receiver member.

Claim 53 also recites that the claimed groove is around at least a part of a lower opening portion of the receiver member. As explained above, Morrison does not show or suggest a groove in its receiver member. Even if wider portion 35 of the receiver member could be considered a "groove," that portion is clearly not around a lower portion, but is intended to be at the top to accommodate a set screw.

For at least these reasons, independent claims 44 and 53 are not anticipated by Morrison.

Claims 45, 47, 49-53 and 55-56 are dependent from one of those claims, and therefore also cannot be anticipated by Morrison. Applicants reserve the right to point out later specific differences between one or more of these dependent claims and the Morrison reference.

Rejections under Section 103 over Sherman in view of Nichols

Claims 46 and 48 were initially rejected as allegedly obvious over a combination of the Sherman and Nichols references. Respectfully, this obviousness rejection should be withdrawn at least because incorporating the ring of Nichols into the Sherman reference would change the principle of operation of Sherman or would be less effective and therefore undesirable.

Nichols discloses a split ring 42 that sits above and out of contact with a bone screw head, while a rod contacts the screw head to fix the rod, "securement body" 16 and the bone screw. Sherman, on the other hand, requires its crown member 13 to float on top of the bone screw in order to provide the force transmission and frictional or mechanical connection that locks the Sherman device. Importing the out-of-contact split ring of Nichols into Sherman would change the principle of operation of Sherman by removing the functions of its crown member 13. See, e.g., column 7, lines 38-46 ("As the compression continues, the flared edge 26 of the bone screw 22 penetrates or bites into the conical bore 45 of the crown member 13. . . . The penetration of the flared edge 26 helps prevent disengagement between the crown member, receiver and bones crew [sic, bone screw] head under severe spinal loads, thereby adding a great degree of security of the fixation of the bone screw 11 to the spinal rod R.") A loss of that "degree of security" would be considered undesirable to one of skill in the art. Thus, using the Nichols ring in place of the Sherman crown member would mean that the Sherman rod would directly contact the bone screw head at substantially one point, fundamentally changing the operation of the Sherman device and making it less desirable. On at least this basis, one of ordinary skill would not find a combination of Sherman and Nichols obvious.

Rejections under Section 103 over Sherman in view of Barker

The Office Action also initially rejected claims 54 and 57-58 as allegedly obvious over a combination of the Sherman references and U.S. Patent No. 6, 280,442 to Barker. This rejection should be withdrawn at least because this application claims priority to the Barker reference, and thus Barker is not prior art to this case. In the paper filed in this case on March 23, 2006, an amendment was made to recite specifically the claim to the benefit of U.S. Patent Nos. 6,660,004

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and 6,280,442. Further, in the event that that claim to benefit was deemed to be late, that paper

included a request to consider it a petition under 37 C.F.R. 1.78(a)(3), an authorization to charge

the appropriate fee for consideration of such a petition, and the statements relating to

unintentional delay. Accordingly, it is respectfully submitted that a proper claim to priority from

U.S. Patent 6,280,442 has been made, and consequently that patent may not be used as a

reference against the pending claims.

Further, the facts discussed above with respect to the applicability of Sherman to claims

44 and 53 are equally applicable to claims 54 and 57-58. For at least the above reasons, the

rejection of claims 54 and 57-58 should be withdrawn.

Rejection under Section 112

The Office Action further alleged that the phrase "said member" in line 2 of claim 45

renders the claim indefinite. It is respectfully submitted that that phrase is clear in the context of

the rest of claim 45 and its independent claim 44, and therefore no amendment is necessary.

However, to give claim 45 additional clarity, the above-noted amendment has been made, and

withdrawal of this rejection is respectfully requested. No substantive changes to the claims are

intended, and none are believed to have been made. The claims are intended to have the full

scope to which their language entitles them, including equivalents.

New Claims

New claims 63-68 have been presented, and their entry is respectfully requested. These

claims are dependent from allowable claims 44 and 53, and therefore present no new search and

examination burden, and a number of claims have been cancelled from this application. The

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subject matter of these claims is supported throughout the application, but particularly in Figure 7 and the text relating to it and to the retaining member and the screw shown in it. No new matter has been added.

Conclusion

It should be understood that the above remarks are not intended to provide an exhaustive basis for patentability or concede the basis for the rejections in the Office Action but are simply provided to address the rejections made in the Office Action in the most expedient fashion.

Applicants reserve the right to contest later positions taken by the Examiner that are not specifically addressed herein. None of the arguments made herein are intended to limit the literal or equivalent scope of the claims.

In conclusion, because the claims in this case are allowable over the references relied on in the pending Office Action for at least the above reasons, a Notice of Allowance in this case is respectfully solicited.

Respectfully submitted,

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